

ILECs to recover a *risk-adjusted* rate of return, particularly in connection with network elements that are risky to provision. 10/ In other words, if a particular network element involves unusual investment risks, the TELRIC-based rate would give the ILEC extra compensation for taking that risk. 11/

It is ironic that the RBOCs make such a passionate case for needing extra incentives to make the enormous investment and risk involved in investing in advanced technology. They totally ignore the plight of the CLECs, who today possess tiny shares of the local market. Even if they grow quickly, they cannot hope to have the volumes to justify the kind of network upgrades that the RBOCs are contemplating. US West's own statistics prove this out. US West argues that because it serves many less densely populated areas, and thus has lower volumes of customers per switch, that it needs special incentives to invest in xDSL technology to serve those customers. 12/ Clearly, if it is hard for US West to justify investing in adding xDSL for each switch (when it does not even need to collocate to do so!),

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10/ *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15849, 15850-51, 15854-56, ¶¶ 686, 691, 699-703 (1996), *vacated in pertinent part sub nom. Iowa Util. Bd. v. FCC*, 120 F.3d 753 (8th Cir. 1997).

11/ The RBOCs' argument that competitors would be able to pay unreasonably low rates for advanced network capabilities and services is even less plausible in the context of resale under Section 251(c)(4). The rate at which an ILEC must offer services for resale to CLECs is based on the ILEC's own retail price -- so if the ILEC has set a supra-competitive retail price for a risky new service, the price resellers will pay will be based on that higher retail price. What the RBOCs appear to wish to do is create a situation in which they alone will be able to offer broadband services -- hardly an environment conducive to competition or innovation.

12/ US West Petition at 25-26.

and when it has the entire local customer base over which to spread the cost of that technology, imagine how difficult it would be for each of US West's competitors to justify that investment:

[D]eploying xDSL to a central office requires enormous capital investments: US West must install one or more DSLAMs in each central office, prepare the loops of each MegaBit Service subscriber, and cable the office to a network of ATM switching systems. 13/

US West also observes that

The central office equipment used to provide MegaBit service is expensive: a basic, 128-user DSLAM costs approximately \$73,000 installed (and several might be necessary), an installed ATM switching system costs approximately \$350,000, and the DS-3 networking needed to connect the central office with other central offices can cost several hundred thousand dollars. . . . 14/

US West also correctly identifies residential and small business customers as the most vulnerable to being left out because of the relatively higher cost of serving them. 15/ With all this, it is genuinely puzzling why an RBOC would not conclude that the best way to recover this investment is to make it available to *all* carriers, thus maximizing volume.

In sum, if the RBOCs are allowed to deny competitors the ability to employ the "features, functions, and capabilities" of xDSL technology, or other new technologies (for this is the precedent for more to come), they would have the

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13/ US West Petition at 35.

14/ *Id.* at 31-32.

15/ *Id.* at 26.

opportunity to reinforce their existing dominance over the incumbent local exchange network. In this way, a RBOC could use its control over the xDSL-based technology to obtain dominance over other packet-based data transport markets. Their exclusive ability to offer broadband and other advanced services would give them leverage into the market for other services as well, since most services will be offered together as "full-service packages."

#### **IV. THE COMMISSION LACKS THE LEGAL AUTHORITY TO GRANT THE PETITIONS.**

LCI will not dwell on the many obvious legal infirmities of the petitions. We assume that other parties will focus on these issues. But it is clear that the Commission lacks the legal authority to grant the petitions.

First, Section 706 is not an independent grant of forbearance authority. Rather, it merely directs the Commission to use the forbearance authority that is specifically granted in Sections 10 and 332 in order to promote deployment of advanced services. This is clear from the context: for example, Section 706 also directs the Commission to use price caps toward the same end, even though the FCC's authority to adopt price cap regulation for interstate telecommunications service was well-settled when the 1996 Act was enacted. *National Rural Telecom Assn v. FCC*, 988 F.2d 174 (D.C. Cir. 1993).

Moreover, unlike the detailed standards governing the specific forbearance authority provided in Sections 10 and 332, Section 706 of the Act contains no substantive standards governing when forbearance would be required

or permitted. <sup>16/</sup> Congress clearly expressed its intent in Section 10(d) that the Commission may not forbear on enforcing Sections 251(c) and 271 until those sections are fully implemented. When it does consider whether to forbear from such key pro-competitive provisions, it must evaluate the state of the market at the time the request for forbearance is made, and make all the factual and policy determinations required by Section 10.

There also is no basis for the FCC to allow the RBOCs into the interLATA business before they have met the requirements of Section 271. Congress made it clear that regardless of the nature of the interLATA services, the RBOCs must meet certain requirements before being allowed to provide them. The fact that RBOCs cannot offer these services today reflects a considered and balanced policy choice that is at the heart of the 1996 Act: RBOC entry into interLATA markets should be contingent on full opening of local markets in order to give the RBOCs a powerful incentive to open their local networks to competitors. The wisdom of that choice applies with equal force to the interLATA services described in the petitions under consideration here. The construction of interLATA networks for data purposes is still construction of interLATA networks. Nor does Section 3(25) of the Act authorize the FCC to, in effect, repeal Section 271 as to certain classes of interLATA offerings by "redrawing" (that is, *erasing*) LATA boundaries. The Commission needs to hold tight to the carrot of interLATA entry if it is to see the benefits of the Act realized. If the RBOCs are anxious to be rid of the

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<sup>16/</sup> 47 U.S.C. §§ 160(a), 332, 157n.

interLATA entry restriction, they should elect to pursue the LCI "Fast Track" approach, discussed above.

Likewise, Section 251(c)(3) of the Act does not contemplate that the Commission will freeze the RBOC network in time, allowing the RBOCs to deny access to the network simply because it evolves with technological change. Instead, that section gives requesting access to all the "features, functions, and capabilities" of the network. 47 U.S.C. § 153(29). Indeed, Congress understood that telecommunications networks are dynamic and fast-changing, and that many different technologies can be used to provide the same services. If Congress had intended to draw lines around services or network facilities or technologies, it would have done so. 17/

In sum, the RBOCs' proposed end run around the Act's statutory framework should not be countenanced.

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17/ See, e.g. 47 U.S.C. § 271(c)(1)(a) (providing that local exchange services provided over Part 22 wireless networks did not count under Track A of Section 271).

## CONCLUSION

For the foregoing reasons, LCI submits that the petitions of Bell Atlantic, US West, and Ameritech should be denied. The Commission should offer the LCI "Fast Track" plan as an option to RBOCs that want to shield new technology investment from competitors and enjoy the benefits of deregulation. The LCI plan allows this without sacrificing the procompetitive goals of the Act.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I, Rebecca G. Wahl, hereby certify that on this 6th day of April, 1998, a copy of the Comments of LCI International Telecom Corp., was hand delivered to the parties listed below.

  
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# **ATTACHMENT B**

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**CLEC Access to xDSL Technology:**  
**A Necessary Predicate for Widespread, Competitive  
Deployment of Broadband Telecommunications  
Services**

**LCI International Telecom Corp.**

**June 1998**

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## **EXECUTIVE SUMMARY**

The technology is now available to enable customers -- in particular, residential and small business customers -- to obtain high-speed access to corporate networks and the Internet over the same twisted pair of copper wires that now provides them with telephone service and relatively low speed Internet access. The potential of such technology -- generically referred to as "digital subscriber line" or "xDSL" -- is great. For that potential to be fully realized, however, it is essential that the local market-opening provisions of the Communications Act continue to apply as the local exchange network evolves to a broadband capability.

### **The Section 706 Petitions**

Three regional Bell operating companies (RBOCs) have asked the Federal Communications Commission to forbear from applying the unbundled network element and resale provisions of the Communications Act to their investments in xDSL technology. They argue that such forbearance is necessary to provide them the appropriate incentives to invest in such network improvements, even though each of them is already making such investments. The Association for Local Telecommunications Services (ALTS) also has filed a petition under Section 706, asking the FCC to make clear that the Act's market-opening provisions make no distinctions on the basis of the nature of technology used, or whether the local network is used to provide voice or data services.

As this White Paper shows, the ability of consumers to reap the fruits of competition in the local exchange, and to have a choice of providers of broadband telecommunications services (as well as Internet service providers), will depend on the ability of competitors to access the xDSL capabilities in the ILEC network.

### **xDSL as the Next Step in the Evolution of Technology that Boosts Network Capability**

All of the RBOCs and GTE have announced the commercial roll-out of xDSL-based services for small business and residential customers. This technology represents the next step in a natural evolution of improvements that boost the capability and speed of the existing network. Over time, telecommunications networks have moved from analog to digital transmission, from in-band to out-of-band signaling (SS7), from copper to fiber optic facilities, and from circuit-switched to packet-switched transmission systems. xDSL is just another step in this natural progression. It involves the use of electronics on the existing copper wires to increase the capacity of those wires -- just as ISDN services and T-1 lines (using HDSL electronics) have been provided.

### **Three Entry Strategies**

The Communications Act makes available three paths for entry into the local exchange market: (1) competition by construction of new local facilities and interconnecting with the incumbent; (2) lease of the ILEC's network elements (in whole or in part) to provide competing service; and (3) resale of the ILEC's retail

services at a wholesale rate. The RBOC petitions attempt to deny competitors the ability to employ the second and third strategies when it comes to xDSL capability.

Requiring competitive local exchange carriers (CLECs) to provide their own xDSL electronics and to collocate at central offices if they wish to provide xDSL services contradicts the letter and purpose of the Act. The Act allows neither regulators nor ILECs to decide when and where it is cost-effective to construct facilities in lieu of using ILEC network elements. By allowing new entrants to take full advantage of incumbent LECs' scale and scope economies, the Act enables competition to proceed more rapidly and to reach more broadly, to include customers that cannot be economically served by competitors if they must construct new facilities.

### **No Legal Basis to Fence Off xDSL Technology**

The Act's forbearance provisions do not permit the FCC to forbear from applying the unbundling and resale provisions of Section 251(c) until that section is "fully implemented." The Commission therefore lacks authority to forbear. Section 706, upon which the RBOCs rely, does not confer additional forbearance authority on the FCC. Rather, Section 706 simply encourages the FCC and state commissions to use any of a number of tools they already possess to encourage the spread of advanced technologies. One of those tools, in fact, is the promotion of local competition -- a goal that would be thwarted by grant of the RBOCs' petitions.

In seeking forbearance, the RBOCs implicitly concede that the Section 251(c) unbundling and resale obligations apply to xDSL technology, and properly so.

The Act's definition of "network element" is broad, and includes all "features, functions, and capabilities" of a "facility or equipment used in the provision of a telecommunications service." 47 U.S.C. § 153(29). Nothing in the definition of network element or in the Act limits this provision to existing technology, to voice services, or to circuit-switching technology.

Loops equipped with xDSL electronics, and the local switching and transport associated with xDSL transmissions, are squarely within the definition of a network element. It would be incorrect to define a loop without regard to the electronics attached to the loop, which make the loop capable of transmission. The deployment of digital loop carrier (DLC) electronics in remote terminals is but one example of the integral role of electronics in enabling the loop to function.

### **The High Costs Facing Competitors to Deploy Duplicate xDSL Technology**

In their petitions, the RBOCs claim to need extra incentives to deploy the large investment required to provide on a broad basis xDSL-based services. Yet they also claim that their competitors, who begin with virtually no local market share, should be required to make this same investment before serving a single customer, even though such competitors, by definition, do not have the volumes necessary to justify collocating DSLAM electronics in every central office and creating a duplicate, high capacity interoffice network that could haul the xDSL traffic back from every central office to the competitor's packet switch.



US West claims that it will not serve the less densely populated central offices without the extra incentive of being able to shield its investment in xDSL technology from competitors. But if US West can barely afford to serve those areas, it is clear that competitors, who can expect to gain much smaller volumes, will not economically be able to provide service in those areas (as well as in other more dense areas). The consequence of forcing competitors to install their own xDSL electronics, switching and local transport will be that few consumers will have a competitive choice of broadband telecommunications service providers.

Using the Dallas/Forth Worth LATA as an example, it becomes clear that with the typical charges now levied for physical collocation of DSLAM equipment, a new entrant the size of LCI could not economically serve the vast majority of central offices in that LATA. Even if physical collocation were made less expensive, or if alternatives to physical collocation were pursued, the result still is that many central offices are not likely to be served. Such calculations do not even take into account the huge cost disadvantages faced by entrants to duplicate the existing interoffice transport network of the ILEC, and does not consider the higher per-line costs faced by CLECs -- including, for example, the cost of hiring and dispatching technicians; engineering the network; maintenance, repair, and remote testing; and coordinating with the ILEC for installation. It also does not consider the delay and cost of negotiating, arbitrating, and resolving disputes with the ILEC.

## **Consistency with the Future**

Providing CLECs with access to xDSL technology also should help to ensure a competitive environment for Internet Service Providers (ISPs), because they would not face a potentially monopolistic provider of broadband telecommunications services. As pointed out by the Commercial Internet Exchange Association, the market-opening provisions of the Act are critical to ensuring the healthy development of a competitive market for ISPs.

It also would be both legally and technically unsustainable to attempt to create a more liberal regulatory regime for packet-switched networks and data services. The Act does not make such distinctions, and it is likely that voice will eventually be provided over broadband data networks. Regulators should refrain from drawing lines on the basis of technology and cost assumptions that will necessarily become obsolete as technologies develop and cost characteristics change.

## **No Added Incentives Needed**

The RBOCs do not need the added incentive of deregulated treatment of advances in technology. All the RBOCs and GTE have announced major commercial rollouts of xDSL based services, and will likely continue to expand such efforts. Deregulated treatment would mean, instead, that the ILECs would extend their current dominance in the local exchange into the future.

**Enforcing the Act's market-opening provisions equally for all technologies and services is the best way to ensure wide deployment of advanced technology and the broad availability of competitive choices in advanced telecommunications services for all consumers.**

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## INTRODUCTION

A number of RBOCs have asked the Federal Communications Commission (FCC) to forbear from requiring them to make available to their competitors the advanced capabilities of their incumbent local exchange networks. In particular, they seek to shield from competitors access to "xDSL" technology, which increases the capacity and speed of existing copper subscriber loops. <sup>1/</sup> These RBOCs (Bell Atlantic, US West, and Ameritech) rely on Section 706 of the 1996 Telecommunications Act, which prompts the FCC to take appropriate action to encourage the broad deployment of advanced technology, and requires it to conduct an inquiry this summer into that subject. <sup>2/</sup>

The Association for Local Telecommunications Services (ALTS) also recently filed a petition under Section 706.<sup>3/</sup> In that petition, ALTS urges the

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<sup>1/</sup> Petition of Bell Atlantic for Relief from Barriers to Deployment of Advanced Telecommunications Services, filed January 26, 1998, CC Docket No. 98-11; Petition of US West Communications, Inc. for Relief from Barriers to Deployment of Advanced Telecommunications Services, filed February 25, 1998, FCC Docket No. 98-26; Petition of Ameritech Corporation to Remove Barriers to Investment in Advanced Telecommunications Capability, filed March 5, 1998, CC Docket No. 98-32.

<sup>2/</sup> 47 U.S.C. § 157(note). In this paper, we limit our discussion to the availability of xDSL technology to competitors, and do not address the RBOCs' requests for interLATA relief for their data services or their other requests for forbearance from important regulatory requirements.

<sup>3/</sup> Petition of the Association for Local Telecommunications Services for Declaratory Ruling Establishing Conditions Necessary to Promote Deployment of Advanced Telecommunications Capability Under Section 706 of the Telecommunications Act of 1996, filed May 27, 1998, with the Federal Communications Commission.

Commission to make clear that the Communications Act requires the incumbent local exchange carriers ("ILECs") to open their local networks for competition in the provision of *all* telecommunications services, whether data or voice, and regardless of the technology used. Such competition, ALTS correctly points out, is what will form the basis for competition and consumer choice in broadband telecommunications services.

In their petitions, in contrast, the RBOCs contend that the only way to create incentives for them to develop technologically advanced networks is to permit them to fence off network improvements from competitors and to relieve the RBOCs of regulatory requirements that are intended to protect the public from their exercise of market power. In essence, these RBOCs ask the Commission to allow them to evade the critical local competition provisions of the Act by freezing the local exchange network in time, relegating competitors to use of inferior technology, depriving competitors of the ability to compete as the network evolves, and robbing consumers of the chance to enjoy the benefits of competition in broadband-network-based services. 4/

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4/ Under the RBOCs' plans, they would be free to: (1) offer new or advanced services without providing other carriers access to the underlying facilities needed to provide those services, contrary to the pro-competitive unbundling requirements of Section 251(c)(3); (2) deny competitors the ability to resell those services pursuant to Section 251(c)(4); (3) construct and use interLATA transmission facilities without first complying with the local market-opening requirements of Section 271, and (4) engage in these activities without the protections of the structural separation requirements of Section 272. 47 U.S.C. §§ 251(c)(3), 251(c)(4), 271, 272.

Consumer choice of broadband service providers, and competitive pricing of those services, will depend completely on the ability of competitors to access the xDSL capabilities in the ILEC networks. Residential customers and small businesses, in particular, will be harmed if the network unbundling and resale requirements do not apply to advanced services. Section 706 itself contemplates that local competition is one important mechanism for delivering advanced services more quickly and more broadly. <sup>5/</sup> Grant of any part of the RBOCs' petitions would chill the development of that competition in broadband telecommunications services, leaving most small businesses and consumers with no choice of broadband service providers.

**I. CONSUMER CHOICE OF BROADBAND PROVIDERS DEPENDS ON COMPETITIVE ACCESS TO XDSL CAPABILITIES IN THE ILEC NETWORK.**

**A. The Consumer Potential of xDSL Technology**

Customers, particularly residential and small-business customers, increasingly are demanding the delivery of high speed, digital, broadband telecommunications services. The use of Digital Subscriber Line ("DSL" or "xDSL") electronics with existing copper (or copper and fiber) loops can help to meet this demand in a cost-effective manner. <sup>6/</sup>

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<sup>5/</sup> Section 706 requires the Commission to use "measures that promote competition in the local telecommunications market" as one means to stimulate deployment of advanced technology. 47 U.S.C. § 157 note.

<sup>6/</sup> Put simply, "DSL" or "xDSL" is a technology that employs electronics to boost the capacity, speed, and capability of existing telephone lines. In Appendix A we set



For the majority of small-business and residential customers, the limited capacity of the copper local loop has been the single most important obstacle to their access to broadband telecommunications services. Since the mid-1990s, the increasing deployment of xDSL electronics has made possible the delivery of broadband telecommunications services at a cost that is within the reach of most small businesses and many consumers. Over xDSL-equipped loops, 7/ these consumers can enjoy high-speed access (in the megabits per second range) to the Internet or to corporate networks, instead of the hypothetical top speeds of 56 kilobits per second provided by voice-grade modems. BellSouth estimates, for example, that its ADSL service can provide speeds of up to 50 times that of conventional modems. 8/

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forth the different forms of xDSL and their characteristics. Appendix B is a diagram of xDSL technology deployed in a "home run copper" installation (where a copper pair runs from the customer premises all the way to the central office). Appendix C is a diagram of xDSL technology deployed in a remote "digital loop carrier" (remote DLC) installation. In a DLC installation, the copper pair runs from the customer premise to a remote DLC terminal, where it is multiplexed with other lines onto fiber (or sometimes copper) facilities that run directly into the ILEC central office switching facilities. In Appendix D we set forth in detail a description of xDSL technology and how it works, both for home run copper and DLC installations.

7/ By "xDSL-equipped loop" we mean the transmission facility from the customer premises to the switch -- i.e. the xDSL modem, the copper wire or fiber, the DSLAM, and (for loops connected to the switch by a DLC) the DLC (including the line cards and FOTS).

8/ News Release, "BellSouth Announces Aggressive 30 Market Roll-Out of Ultra-High Speed BellSouth.Net FastAccess ADSL Internet Services," May 20, 1998, at [www.bellsouthcorp.com](http://www.bellsouthcorp.com).